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## **ABSTRACT**

A method of making a plurality of substantially identical microbar encoders, the microbar encoders having a characteristic detectable signal and capable of linking to a probe molecule. In these methods, one or more layers are sequentially deposited unsupported by a template onto a substrate, each layer comprising a plurality of indicator materials. The deposited layers are divided into the plurality of microbar encoders. Diverse groups of microbar encoders can be made separately, and these diverse members can be mixed to provide an anisotropic array for screening multiple target molecules in a massively parallel manner. The present inventive methods thus result in large scale, efficient production of distinguishable encoders.